

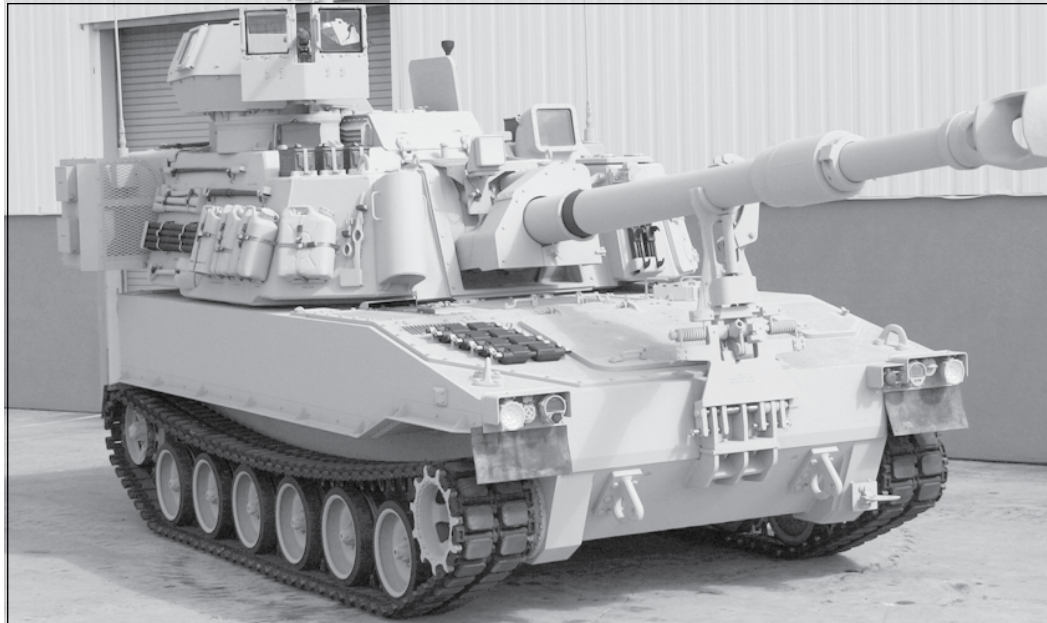
PIM: The Next Generation Paladin

By Major Corey B. Chassé, FA

The venerable Paladin M109A6 self-propelled howitzer and the M992A2 Field Artillery Ammunition Supply Vehicle (FAASV) are being upgraded. These vehicles are being transformed into the M109 Paladin Integrated Management (PIM), also known as the M109 Family of Vehicles (FOV), by the Training and Doctrine (TRADOC) Capabilities Manager, Cannon (TCM-Cannon) at Fort Sill, Oklahoma, Product Manager Fires Support Platforms (PM-FSP) and BAE Systems. All the FOV will be rebaselined to have a common chassis.

The PIM program is a sustainment program engineered to improve readiness, avoid components' obsolescence and increase sustainability of the platforms out to the year 2060. The upgrades will allow the PIM to fire Excalibur (XM982) rounds and fuzes such as the precision guidance kit (PGK).

Operationally, the PIM will be faster, more maneuverable, more easily sus-



The Internal Research and Development (IRAD) Paladin is a BAE Systems concept of the Paladin Integrated Management's (PIM's) self-propelled howitzer. (Photo courtesy of BAE Systems)

tained and more lethal, but sustainment is the number one reason for PIM.

Sustainment Program. The sustainment program will allow maintainability and sustainability of the PIM through commonality with the Future Combat Systems (FCS) Non-Line-of-Sight Cannon (NLOS-C) and the heavy brigade combat team's (HBCT's) Bradley fighting vehicle. PIM will leverage fleet commonality for key components including the Bradley engine-trans-final drives-suspension and the FCS NLOS-C Rammer. See Figure 1 for the PIM's key components and aspects and Figure 2 for PIM modifications to the Paladin.

PIM will ensure the Paladin fire support platform continues to meet the needs of the Army's HBCT maneuver commander by improving fires support response and

increasing the mobility of the fires support platform.

The PIM uses the existing main armament, recently designed cab structure, transparent armored gun shield (TAGS), and belly plate and side armor improvements, increasing crew survivability, while replacing outmoded chassis components with advanced components from the Bradley fighting vehicle to increase sustainability and commonality across the HBCT.

It also incorporates select technologies from the NLOS-C, including an automated (modified electric) projectile rammer and modern electric-gun drive systems to replace the current hydraulically operated elevation and azimuth drives that were designed in the early 1960s. The M109 FOV platforms (Paladin, FAASV and Paladin Operation Command Vehicle or POCV) will be fitted with Blue Force Tracker capability to ensure compatibility with future architectures. These upgrades along with better communication technology will improve operational awareness significantly on the battlefield and will reduce the logistics footprint within the HBCT.

The new electric-gun drives and rammer components, as well as a microclimate air conditioning system, will be powered by the Common Modular Power System (CMPS). CMPS, which will be also installed on Stryker and has been installed on high-mobility, multipurpose wheeled vehicle (HMMWV) demonstrator vehicles, is based on architecture jointly developed by the Army Tank-Automotive Research Development and Engineering Center (TARDEC) and the Program Executive Office-Ground

- Creates commonality with heavy brigade combat team's (HBCT's) Bradley platforms and reduces logistics footprint.
- Improves survivability and allows growth potential.
- M109 Family of Vehicles (FOV) Paladin projectile stowage increases:
 - Forward Vertical (Under the Weapon): 2
 - Hull Extension "Ready Racks": 10
 - Rear Vertical (Hull Extension): 8
 - Right Side Sponson: 7
 - Left Side Sponson: 10
 - Cab "Ready Rack": 6
- M109 FOV Field Artillery Ammunition Supply Vehicle (FAASV) projectile stowage increases:
 - Forward Projectile Racks: 90
 - Vertical Rack on Left Side Sponson: 5
- Improves mobility to keep pace with maneuver forces.
- Sustains the M109 PIM FOV out to the year 2060.
- Architecture supports future modernization.

Figure1: Key PIM Components and Aspects

Combat Systems (PEO-GCS).

Goals. A total of 600 PIM sets (Paladin and FAASV) are slated for upgrade. A ready-for-testing prototype will be released in 2009 with the first unit equipped (FUE) projected for 2012.

A mix of current Paladin and FAASVs will continue to be in the fleet along with the M109 FOV sets. This mix will be balanced by the National Level Recap program designed to maintain the current fleet through 2020, after which it is expected that the current fleet will be totally replaced by the M109 FOV.

Providing the best value for Soldiers in conjunction with a low-risk solution that ensures the Paladin and FAASV

platforms remain ready for the fight today and tomorrow are the goals of the partnership between the Army's Project Manager-HBCT, Anniston Army Depot, Alabama, and BAE Systems, York, Pennsylvania.

Once delivered to the field, the PIM M109 FOVs will give HBCT commanders upgraded capabilities including more maneuverability, higher rate of speed, increased crew survivability and delivery of accurate and timely fires where and when needed. In addition, the upgraded Paladins and FAASVs will be sustainable, allowing commanders to have more confidence in and depend more on their fleet.

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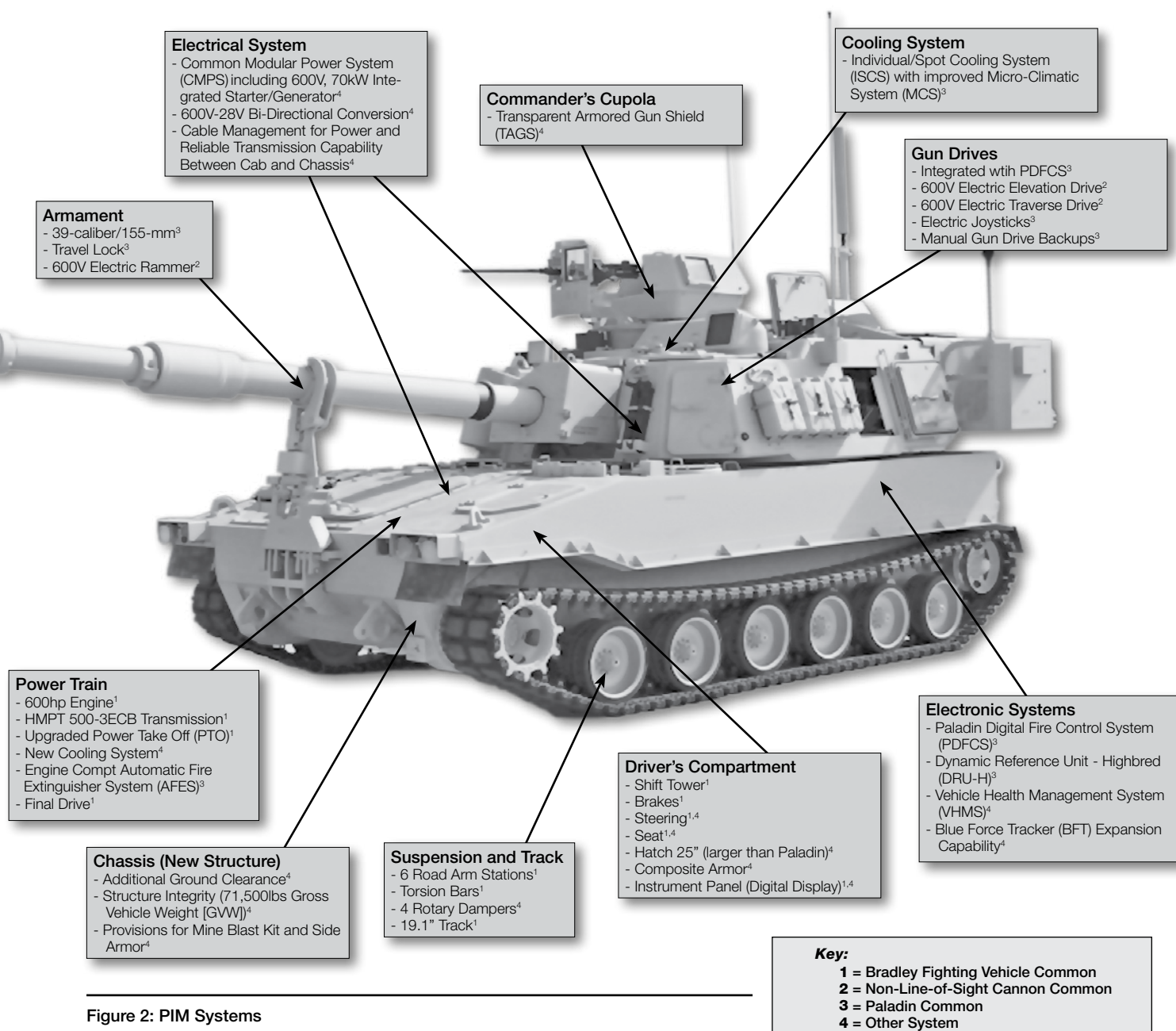


Figure 2: PIM Systems